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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/501,817	01/27/2005	Ralf Salamch	710270-016	6860
59582 7590 08/29/2007 DICKINSON WRIGHT PLLC 38525 WOODWARD AVENUE SUITE 2000 BLOOMFIELD HILLS, MI 48304-2970			EXAMINER LEUNG, KA CHUN A	
			ART UNIT 3747	PAPER NUMBER
			MAIL DATE 08/29/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/501,817

Applicant(s)

SALAMEH, RALF

Examiner

Ka Chun Leung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE THREE MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 9-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 July 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is in response to Applicant's amendments filed on 06/14/2007.

#### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the fusion zone fabricated from a different material than that of the axial and radial sealing lips, as provided in Claim 16, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The disclosure is objected to because of the following informalities:
  - a. In Paragraph [0021], Line 3, the reference numeral for “the add-on part” is incorrect. The correct reference numeral should be ‘24’
  - b. In Paragraph [0022], Line 1, the reference numeral for “radial sealing lips” is incorrect. The correct reference numeral should be ‘5’

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 12 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not disclose a tapered “neck region”. Instead the specification only provides support for a tapered “fusion zone” that is “molded in a wavelike manner”.

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6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 9 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Claim 9 recites the limitation "said carrier member" in Line 3. There is insufficient antecedent basis for this limitation in the claim. Presently the "carrier element" and the "carrier member" are considered as the same item.

9. Claim 11 recites the limitation "said carrier member" in Line 1. There is insufficient antecedent basis for this limitation in the claim. Presently the "carrier element" of Claim 1 and the "carrier member" are considered as the same item.

### ***Claim Rejections - 35 USC § 102***

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. Claims 9-13 are rejected under 35 U.S.C. 102(b) as being anticipated by ANTONINI et al (US Patent 4,588,195). ANTONINI et al discloses a floating lip seal assembly with convoluted flexible section comprising an outer body (38) positioned

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against a bore (40), and a flexible body portion (12) attached to the axially extending inside annulus (34) of the outer body (38).

12. Specifically regarding Claim 9, the radially extending annulus (36) has been interpreted as a "bottom surface". Both the radially extending annulus (36) and the extending outer body (38), which are part of the metallic case (14), are installed adjacent to the bore (40) and thus meets the limitation of being "positioned against a mating component".

13. Specifically regarding Claim 10, the region with the first reverse bend (28) and second reverse bend (32) has been interpreted as a "fusion zone" since it is located between the "axial sealing lip", defined by flexible body portion (12) surrounding the inside annulus (34), and the "radial sealing lip" defined by sealing lip (20).

14. Specifically regarding Claim 11, the inside annulus (34) contains an axially angled region.

15. Specifically regarding Claim 12, the first reverse bend (28) and second reverse bend (32) forms a tapered region molded in a wavelike manner.

16. Specifically regarding Claim 13, a garter spring (24) is mounted annularly about the sealing lip (20) as shown in Figure 1.

### ***Claim Rejections - 35 USC § 103***

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

ANTONINI et al and PHELPS et al

19. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over ANTONINI et al (US Patent 4,588,195) in view of PHELPS et al (US Patent 4,021,049).

20. ANTONINI et al discloses a floating lip seal assembly with convoluted flexible section comprising an outer body (38) positioned against a bore (40), and a flexible body portion (12) attached to the axially extending inside annulus (34) of the outer body (38). ANTONINI et al further discloses a garter spring (24) is mounted annularly about the sealing lip (20). However, ANTONINI et al does not disclose the use of a rigid ring in place of the garter spring.

21. PHELPS et al discloses a lip type seal for a crankshaft comprising a seal assembly (10) with a lip seal (22) and a metal retainer ring (28) that circumscribes the lip seal at a point radially inward of the lip portion (24).

22. Because both ANTONINI et al and PHELPS et al teach lip seals for a rotary shaft including a retaining means mounted annularly about the lip seal, it would have been

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obvious to one of ordinary skill in the art to substitute one retaining means for another to achieve the predictable results of securing the lip seal against the shaft.

ANTONINI et al, PHELPS et al, and PHILLIPS et al

23. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over ANTONINI et al (US Patent 4,588,195) and PHELPS et al (US Patent 4,021,049) as applied to Claim 14 above, and further in view of PHILLIPS et al (US Patent 6,527,276)

24. ANTONINI et al discloses a floating lip seal assembly with convoluted flexible section comprising an outer body (38) positioned against a bore (40), and a flexible body portion (12) attached to the axially extending inside annulus (34) of the outer body (38). ANTONINI et al further discloses a garter spring (24) is mounted annularly about the sealing lip (20). PHELPS et al discloses a lip type seal for a crankshaft comprising a seal assembly (10) with a lip seal (22) and a metal retainer ring (28) that circumscribes the lip seal at a point radially inward of the lip portion (24). However, neither reference discloses a rigid ring molded in the fluid seal.

25. PHILLIPS et al discloses a sealing system for a gear reducer comprising a shaft (12), a double lip seal (66a), and a biasing element (74a). PHELPS et al further discloses that the biasing element (74a) "is embedded within the lip seal to bias lip 68a into tight engagement about shaft 12".

26. It is also known in the art to embed a biasing element into the seal itself to prevent contact between the biasing element and the fluid being sealed and additionally has the benefit of minimizing thermal expansion of the biasing element (particularly if it



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is metallic) by insulating it complete with the seal material. For example see US Patent 4,449,717, Col. 2, Lines 62-68.

27. Thus it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the metal retainer ring of ANTONINI et al and PHELPS et al embedded within the lip seal, in light of the teachings of PHILLIPS et al, in order to provide lip seal with a tight engagement against the shaft and to isolate the biasing element from the environment.

ANTONINI et al and CATHER JR.

28. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over ANTONINI et al (US Patent 4,588,195) in view of CATHER JR. (US Patent 4,274,641).

29. ANTONINI et al discloses a floating lip seal assembly with convoluted flexible section comprising an outer body (38) positioned against a bore (40), and a flexible body portion (12) attached to the axially extending inside annulus (34) of the outer body (38). ANTONINI et al further discloses that the flexible body portion (12) is molded to the rigid metallic case (14) as shown at joint (16). However, ANTONINI et al does not disclose that the radial sealing lip as having a different material than the first and second bend portion.

30. CATHER JR. discloses a sealing element (24) including a sealing lip (38), a bearing member (42) and a flex portion (44). A liner (46) is molded on the shaft side and provides low friction characteristics and allows the seal to maintain contact even with shaft wear.

31. Thus it would have been obvious to a person having ordinary skill in the art at the time the invention was made to have provided the seal of ANTONINI et al with a bearing member including a liner, in light of the teachings of CATHER JR., in order for the seal to maintain contact with the shaft even when the shaft is worn.

32. Specifically regarding Claim 16, the "axial lip" of ANTONINI et al is located at the joint (16) is molded onto the metallic case (14) and is therefore made up of two different materials. The "radial lip" comprising the combination of the sealing lip (20) of ANTONINI et al and the bearing member (42) of CATHER JR. would also include two different materials since polytetrafluoroethylene is bonded to the elastic back. Since, both the "axial lip" and the "radial lip" would comprise of two different materials, while the first and second bend portion consists of only the elastic material, the material makeup of the bend portion compared to the "axial lip" and "radial lip" would be different.

#### ***Response to Remarks/Arguments***

33. Applicant's arguments with respect to Claims 9-16 have been fully considered but are moot in view of the new ground(s) of rejection.

#### ***Conclusion***

34. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. ANTONINI et al (US Patent 4,844,484) has been cited to show a similar lip seal.

35. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ka Chun Leung whose telephone number is (571) 272-9963. The examiner can normally be reached on 7:30AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Cronin can be reached on (571) 272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KCL  
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Examiner  
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SUPERVISORY PATENT EXAMINER